OFFICE OF MANNED SPACE FLIGHT PROGRAM DIRECTIVE	M-D MA 1400.106 (Project)	DATE 2/25/69

APOLLO PROGRAM DIRECTIVE NO. 49

TO : DISTRIBUTION

FROM:
Sam C. Phillips
Lt. General, USAF
Apollo Program Director

SUBJECT: Apollo Pre-flight Microbial Sampling

OFFICE OF PRIME RESPONSIBILITY: MSF Medicine (MM)

REFERENCES:
(a) NPD 8020.7, "Outbound Spacecraft: Basic Policy Relating to Lunar and Planetary Contamination Control", September 6, 1967
(b) NMI 1052.90, "NASA-Departments of Agriculture; Health, Education and Welfare; Interior and the National Academy of Sciences Inter-agency Agreement - Protection of the Earth's Biosphere from Lunar Sources of Contamination", August 24, 1967.
(c) NPD 8020.8, "Outbound Lunar Biological Contamination Control: Policy and Responsibility"
(d) Joint OSSA/OMSF Operating Agreement for Pre-flight Microbial Sampling in the Apollo Program, December 23, 1968.

I. PURPOSE

The purpose of this directive is to implement within the OMSF and its Centers the requirements for pre-flight microbial sampling of selected Apollo flight hardware in compliance with references (a) through (d).

II. BACKGROUND

Pre-flight microbial samplings in connection with Apollo flight missions are necessary for the following:

a. MSF medical needs - to evaluate the biological environment in the habitable area of the Command Module. These needs are normally specified in the "Apollo Medical Operations Plan" developed by the MSC Director of Medical Research and Operations.

b. Back contamination evaluation requires the identification and quantification of the outbound biological burden. Only by comparison of pre-flight and post-flight microbial analyses is it possible to accurately isolate and identify

potential extraterrestrial life forms carried on returning lunar landing crews, associated materials, and hardware. (References (a) and (b)

c. Scientific needs - to obtain and maintain for future references a biological contamination inventory for the Moon (Reference (c)

The general policy and responsibility for the protection of the earth's biosphere from lunar sources of contamination will be established by an appropriate NPD.

III. SCOPE

The requirements of this directive apply to the three MSF Field Centers with primary responsibility being vested at MSC.

Microbial sampling procedures are necessary for the following types of Apollo missions:

a. All manned flights - to meet MSF medical needs to define the habitable environment in the Command Module.

b. Flights which will or may encounter the Moon - to quantify the biological burden which could be deposited on the Moon.

c. Flights intended to land on the lunar surface - to expedite the release of returning flight crews, spacecraft, and lunar samples from quarantine, and identify possible extra-terrestrial life forms.

IV. RESPONSIBILITIES

OSSA, Director of Bioscience Programs, within five months of flight readiness date, will furnish OMSF with specific requirements for the microbial sampling of typical Apollo flight missions in accordance with responsibilities assigned by appropriate management directives. In addition, the Director of Bioscience Programs will make available necessary personnel at KSC to develop sampling techniques, undertake actual sampling, and process subsequent samples as might be required by MSF operational elements at KSC.

OMSF, Director of Space Medicine, acting for the Apollo Program Director, will interface with the OSSA Director of Bioscience Programs to obtain the timely submission of microbial sampling requirements, evaluate their technical justification, and furnish validated requirements to the MSC Director of Medical Research and Operations within four months of flight readiness date.

MSC, Director of Medical Research and Operations, will take the action required to integrate into a single overall plan OSSA and OMSF pre-flight microbial sampling requirements and coordinate with:

1. MSC, Apollo Spacecraft Program Manager, to insure compatibility with Command Module and Lunar Module engineering and operational constraints.

2. MSFC, to insure compatibility with engineering and operational constraints of the launch vehicle.

3. KSC, Director of Launch Operations, to determine the feasibility of the requirements and to integrate them into the countdown procedure for the specific mission.

The MSC Director of Medical Research and Operations will, within three months of flight readiness date, furnish the plan to the OMSF Director of Space Medicine (MM) who will review it to insure that full consideration has been given to all known needs for pre-flight microbial samples. Code MM will then furnish a copy of the plan to the Apollo Program Office (Code MAO) for inclusion in the appropriate Mission Implementation Plans.

GSA FPMR (41 CFR) 101-11.6

UNITED STATES GOVERNMENT

Memorandum

TO : Distribution

DATE: APR 10 1969

FROM : Apollo Program Manager, AP

SUBJECT: APD #49, "Apollo Pre-flight Microbial Sampling

Reference: Briefing Note to Dr. Debus from AP, dated March 17, 1969, subject as above, with attachment: APD #49, "Apollo Pre-flight Microbial Sampling"

1. APD #49 has been reviewed by AP. The KSC impact is summarized in the reference, see attached copy.

2. APD #49 formalizes action that has been accomplished previously in a somewhat less systematic manner. No new KSC documentation is expected to be required. No serial impact is anticipated on schedules or operations.

3. Comments you may have pertinent to the KSC posture in regard to APD #49 should be directed to the Chief, AP-SVO, prior to April 25, 1969.

R. O. Middleton

R. O. Middleton
Rear Admiral, U. S. Navy

Attachment: As stated

Distribution:
STDL-B

9010-108

MAR 17 1969

BRIEFING NOTE TO: Dr. Debus

SUBJECT: APD #49, "Apollo Pre-flight Microbial Sampling"

1. APD #49, "Apollo Pre-flight Microbial Sampling," dated February 25, 1969, is a new directive. It documents the requirement for obtaining microbial samples on all manned flights, all flights which will or may impact on the moon, and all flights intended to land on the moon.

2. Analysis of the samples will be used for three purposes:

a. To define the habitable environment of manned spacecraft.

b. To determine the amount of biological material which could be deposited on the moon.

c. To isolate and identify potential extraterrestrial life forms on returning lunar landing crews, associated materials, and hardware, by comparison with analyses of post-flight samples.

3. Responsibility for the sampling program assigned to KSC is:

Director of Launch Operations - to coordinate with Director, Medical Research and Operations, MSC, to determine the feasibility of the requirements and to integrate them into the countdown procedures for each mission.

4. Responsibilities for the sampling program assigned to other organizations are described on the attachment.

5. APD #49 formalizes action that has been accomplished previously in a somewhat less systematic manner. No new KSC documentation is expected to be required. No serial impact is anticipated on schedules or operations.

6. Distribution of this APD will be made to first and second level Directors with an accompanying memorandum requesting notification to my office of any impact they may find.

R. O. Middleton
Rear Admiral, U. S. Navy

Attachment: a/s

RESPONSIBILITIES FOR THE SAMPLING PROGRAM

Director of Bioscience Programs, OSSA

Furnish specific requirements to OMSF within five months of the flight readiness date of each mission. Also to make available the necessary personnel to develop sampling techniques and to obtain and process samples.

Director of Space Medicine, OMSF

Act for the Apollo Program Director as the interface with the Director of Bioscience Programs to obtain and evaluate the justification for sampling requirements and to furnish valid requirements to the Director of Medical Research, MSC.

Director, Medical Research and Operations, MSC

Integrate requirements into an overall plan and coordinate with:

Apollo Spacecraft Program Manager, MSC - to insure compatibility with Command and Lunar Module engineering and operational constraints.

Saturn V Program Manager, MSFC - to insure compatibility with Saturn V launch vehicle engineering and operational constraints.

Director of Launch Operations, KSC - to determine the feasibility of the requirements and to integrate them into the countdown procedures for each mission.

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